

TWINE LINE

The educational newsletter of Ohio Sea Grant, covering issues, events, and research related to Lake Erie and the Great Lakes

Aquatic Nuisance Species Alert

Cercopagis pengoi – the Fishhook Waterflea

Cercopagis pengoi, more commonly called the "fishhook waterflea," is a tiny animal (about 1/2" long) that is a member of a group of organisms called crustaceans which includes species such as crayfish and shrimp. Originally from Eastern Europe, *Cercopagis* was found in Lake Ontario in 1998 and has already caused fishing-related problems there and in several of the Finger Lakes in New York. It is not yet in Lake Erie, but it has the potential to become another aquatic nuisance species problem throughout Ohio's waters.

Like its relative the spiny waterflea (*Bythotrephes cederstroemi*), the fishhook waterflea has a long spiny tail, except that *Cercopagis* has an "S" shaped hook or bend in its long tail. The main body length is generally less than 2 millimeters, but its tail can be 9-10 millimeters long, giving the animal an overall length of slightly more than a centimeter (about 3/8 – 1/2 inch). *Cercopagis* is not easy to see because its body is clear to milky-white, but it does have a large black eye making it more visible, especially when individuals are clumped together in large groups. The masses of individuals look and feel like wet cotton batten. Tiny black dots in these masses are the single eyes of each individual fishhook waterflea.

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The mass, pictured above, is a clump of fishhook waterfleas hooked together by their tails. According to New York Sea Grant Scholar Betsy Damaske, there are more than 23,000 specimens contained in this jar.

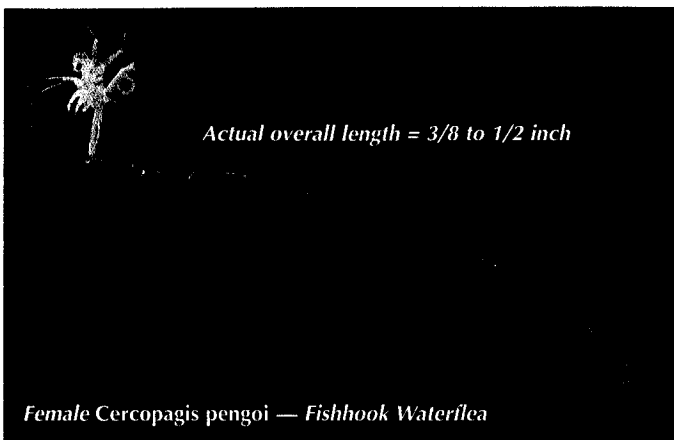
The sample was collected in August 1999 from Lake Ontario.

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Dr. Igor A. Grigorovich, University of Windsor

What problems does it cause?

The fishhook waterflea has the potential to cause problems for Lake Erie, the Great Lakes ecosystem, and Ohio anglers. Because Lake Erie is the southernmost, shallowest, warmest, and most biologically productive of the Great Lakes, it is likely that *Cercopagis* will thrive in Lake Erie and its populations will therefore be the largest. As a result, the impact in Lake Erie could be greater than in the other Great Lakes. This may not be good news for the perch and walleye populations.

Although it is too early to verify the impacts that *Cercopagis* may have on the Great Lakes' ecosystem, scientists are concerned that its high reproductive rate will lead to high population densities. *Cercopagis* can produce up to 13 offspring at one time, reproduce numerous times in one season, and produce "resting eggs" which can remain dormant over the winter. *Cercopagis* is a large type of zooplankton (small animals that live and swim within the water column). It eats smaller zooplankton which are also important food items for the larval fish of most species. Zooplankton are also an important food source for forage fish that are eaten by larger sport and commercial fish. Scientists are concerned that a large population of *Cercopagis* could deplete the population of smaller zooplankton and thereby reduce growth and survival of important fish species. Scientists hope that *Cercopagis* will become an important food item for fish, but are concerned that the long tail will make it difficult for small fish to handle. Research is vital to determine the full impact of *Cercopagis* on the biodiversity and ecology of the Great Lakes ecosystem.

Since *Cercopagis* can achieve very high population densities in lakes during the summer, anglers may get frustrated by its long spiny tail, which is easily snagged by fishing lines and nets. Anglers are most likely to encounter *Cercopagis* on their fishing lines in clumps of hundreds of individuals. The animal's long spiny tail can become entangled on fishing lines, creating havoc for anglers as the first line guide of their fishing rod becomes clogged with hundreds of *Cercopagis*. Anglers have reported having to cut their lines because they are unable to reel them in.

How fast can it spread?

By late 1999, less than a year after its initial discovery in Lake Ontario, *Cercopagis* had invaded at least six Finger Lakes in New York state, as well as Grand Traverse Bay in northern Lake Michigan, and southern Lake Michigan. Any recreational boat and fishing or diving gear that has been used in these waters will likely be contaminated and can spread the animal to other bodies of water, such as Lake Erie.

How can anglers and others avoid *Cercopagis*?

At this point no one can say for sure how *Cercopagis* will behave if and when it gets into Lake Erie. However, from previous experience with other large zooplankton, it is expected that the greatest densities of the organism will be found at and just above the thermocline (the area of rapid temperature change between the warm surface layer and the cold bottom layer). In Lake Erie the thermocline in the eastern and central basins often can be found between depths of 45 and 55 feet (a thermocline seldom forms in the western basin). Anglers are most likely to experience the above mentioned clogging problems when trolling. If clogging is a serious problem, anglers can try trolling just above the thermocline or stop trolling.

What can be done to stop this invader?

You can do your part to slow the spread of this species by taking the following actions:

- Thoroughly clean your fishing and diving gear, nets, and boats before you move from one lake to another.
- Drain water from motor, live well, bilge, and transom wells while on land before leaving the area.
- Empty your bait bucket on land upon leaving the water at the end of the day - do this before you leave the area. Do not release live bait into a body of water or release animals from one waterbody to another.
- Discard contaminated line and nets that you can't get clean.

What should you do if you think you've found fishhook waterfleas?

Scrape or wash a portion of the clump of individuals from your line; place it in a baggie or small jar; add enough lake water to cover it; and refrigerate or put on ice. If possible, put the sample in a jar with an equal mixture of lake water and rubbing alcohol (one part lake water to one part rubbing alcohol) to preserve the specimen. Then contact one of the following Ohio Sea Grant Extension Agents or the Ohio Department of Natural Resources Division of Wildlife.

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